



AT&T

**Video Display
Controller VDC 750**

Installation Guide

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Warning

THIS EQUIPMENT HAS BEEN CERTIFIED TO COMPLY WITH THE LIMITS FOR A CLASS B COMPUTING DEVICE, PURSUANT TO SUBPART J OF PART 15 FCC RULES. ONLY PERIPHERALS (COMPUTER INPUT/OUTPUT DEVICES, TERMINALS, PRINTERS, ETC.) CERTIFIED TO COMPLY WITH THE CLASS B LIMITS MAY BE ATTACHED TO THIS COMPUTER. OPERATION WITH NON-CERTIFIED PERIPHERALS IS LIKELY TO RESULT IN INTERFERENCE TO RADIO AND TV RECEPTION.

ALL CABLES USED TO CONNECT TO PERIPHERALS MUST BE SHIELDED AND GROUNDED. OPERATION WITH CABLES, CONNECTED TO PERIPHERALS, WHICH ARE NOT SHIELDED AND GROUNDED MAY RESULT IN INTERFERENCE TO RADIO AND TV RECEPTION.

This equipment generates and uses radio frequency energy and if not installed properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type-tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 FCC rules, which are designed to provide reasonable protection against interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If the equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the computer with respect to the receiver.
- Move the computer away from the receiver.
- Plug the computer into a different outlet so that the computer and receiver are on different branch circuits.
- Move the cables connected to the computer to minimize the interference.
- Tighten all screws on cables and the computer housing.
- Install blank panels, originally supplied with the computer, in all unused card slots.

If necessary the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet, prepared by the Federal Communications Commission, helpful:

"How to Identify and Resolve Radio-TV Interference Problems"

This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 004-000-00398-5.

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AT&T warrants this AT&T Computer Product to be in good working order for a period of 1 year from the date of purchase from AT&T or an authorized AT&T Computer dealer. Should this Product fail to be in good working order at any time during the 1 year warranty period, AT&T will, at its option, repair or replace this Product at no additional charge except as set forth below. Repair parts and replacement Products will be furnished on an exchange basis and will be either new, remanufactured or refurbished, at the discretion of AT&T. All replaced parts and Products become the property of AT&T. This limited warranty does not include repair of damage to the Product resulting from accident, disaster, misuse, abuse, non-AT&T modification of the Product, or other events outside AT&T's reasonable control or not arising under normal operating conditions.

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CHAPTER 1

INTRODUCTION

- Monitors That Work With the VDC 750
 - What You Should Have
 - Hardware Features of the VDC 750 Board
-

The Video Display Controller VDC 750 is a board (card) which provides a highly readable display on both the monochrome and color monitors for the AT&T Work Group System Family. This board supports the following:

- AT&T Extended EGA, a 16 color, 640 x 400 high-resolution graphics mode.
- IBM EGA Standard.
- AT&T 640 X 400 high-resolution monochrome graphics.
- IBM CGA Standard.

This document provides the installation procedures for the VDC 750 board for the AT&T Work Group System Family and similar models. When installing the VDC 750 into a computer which is different from the type shown in this guide, refer to that computer's installation guide.

Monitors That Work With the VDC 750

The following is a list of the AT&T monitors that operate with the VDC 750.

AT&T 319

- The 319 is an AT&T multi-mode monitor that will display a full range of 64 colors and all of the high-resolution text and graphics modes that are available from the VDC 750. This is the best monitor to use with the VDC 750.

AT&T 318

- The 318 color monitor will display AT&T high-resolution text and 16-color CGA. EGA modes are limited to 16 colors on this monitor and will appear slightly vertically compressed when compared to the 319 monitor.

AT&T 314

- The 314 monochrome monitor will display 16 shades of gray in the AT&T high-resolution graphics and EGA modes. This is the best monochrome monitor to use with the VDC 750.

AT&T 313

- The 313 monochrome monitor displays 16 shades of gray. The EGA mode will appear slightly compressed vertically on this monitor when compared to the 314.

What You Should Have

Inside the package you should find:

- The *Video Display Controller VDC 750 Installation Guide*.
- A Video Display Controller VDC 750.
- A 5.25" and a 3.5" Floppy Diskette in an envelope.
- The Product Registration Card.

You will also need a standard, flat-blade screwdriver.

Hardware Features of the VDC 750 Board

The Video Display Card features several connectors, switches, and controls. The following diagram gives the user a better understanding of these features and their locations on the card.

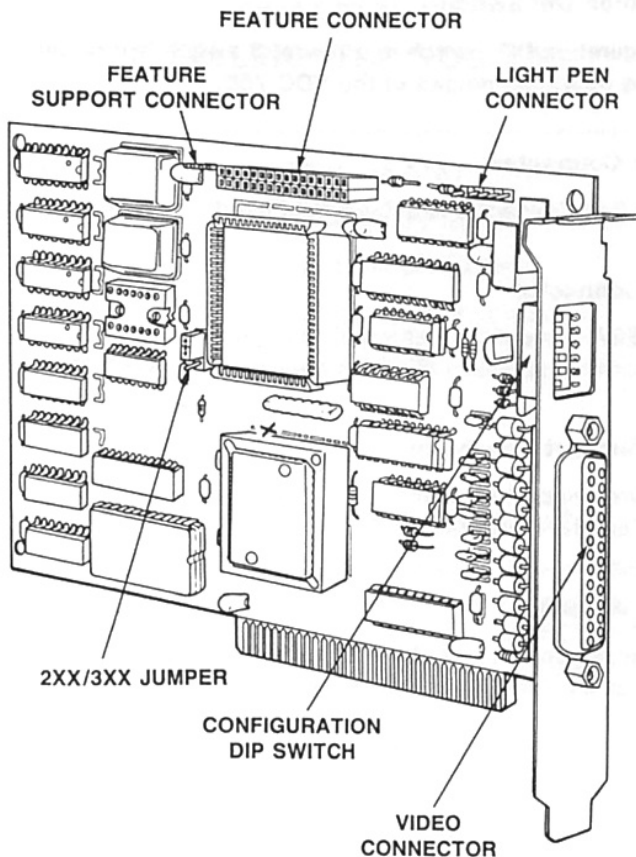


Figure 1-1. Video Display Card

Video Connector

The video connector is a 25-pin socket that attaches the video input connector of the monitor to the VDC 750.

Configuration DIP Switch

The Configuration DIP Switch is a row of 6 switch levers used to control the operating modes of the VDC 750.

Light Pen Connector

The Light Pen Connector is a 5-pin field used to connect a light pen.

Feature Connector

The IBM EGA compatible Feature Connector is a 32-pin connector used to connect special expansion boards to the VDC 750.

Feature Support Connector

The Feature Support Connector is a 4-pin field used in conjunction with the Feature Connector.

2XX/3XX Jumper

The jumper is used to select the board's I/O address. This jumper is pre-set at the factory to 3XX and need not be changed.

CHAPTER 2

INSTALLING THE VDC 750

- Installing the VDC 750 in an AT&T Computer
 - Checking the Configuration DIP Switch Settings
 - Checking the 2XX/3XX Jumper Setting
 - Mounting the VDC 750 in an AT&T Computer
 - Configuring the AT&T Computer
 - Installing the Software
-

Installing the VDC 750 in an AT&T Computer

To install the VDC 750 in your AT&T Computer, please follow the installation steps in order to insure proper video operation. Additional instructions for the AT&T PC 6300 Plus, PC 6310, and computer systems with STARLAN may be found in **Appendixes F through H**.

- Checking the Configuration DIP Switch settings.
- Checking the 2XX/3XX Jumper settings.
- Mounting the VDC 750 in an AT&T Computer.
- Configuring the AT&T Computer.
- Installing the Software.

Your video display controller will not operate properly unless the installation directions are followed. If the directions have been followed and your display is still not working properly, please contact the AT&T Computer Hotline at 1-800-922-0354. The problem may include the computer or the monitor.

Checking the Configuration DIP Switch Settings

Before installing the VDC 750 in your computer, make sure the Configuration DIP Switch levers are in the correct default setting. This will insure that they have not been moved during shipping or handling. The Configuration Dip Switch is located on the rear mounting bracket of the video card.

Default Setting of the Configuration DIP Switch

Lever Number	1	2	3	4	5	6
	OFF	ON	ON	OFF	OFF	OFF

If any of the switches are not in the proper default position, they can be changed using the point of a ball point pen or a mechanical pencil as shown in Figure 2-1.

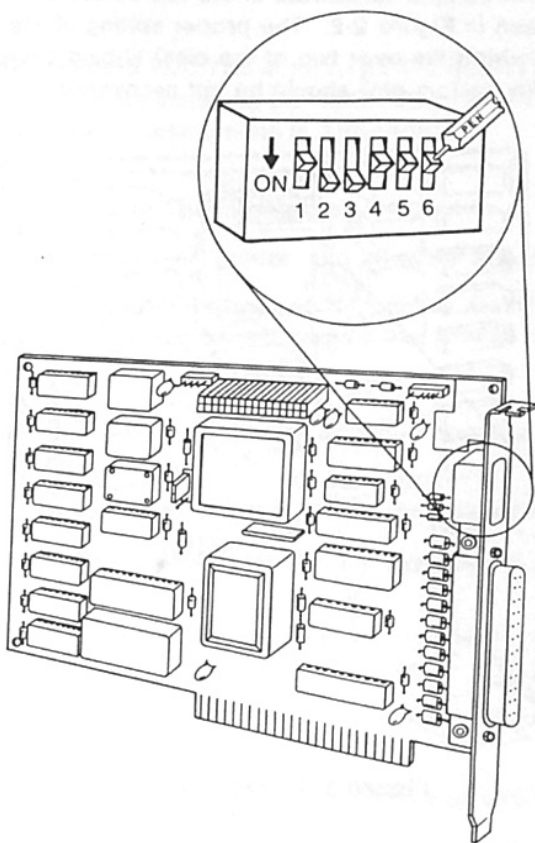


Figure 2-1. Configuration DIP Switch

Checking the 2XX/3XX Jumper Setting

The 2XX/3XX Jumper is located in the left center of the video board as seen in Figure 2-2. The proper setting of the jumper (the plastic clip which fits over two of the pins) should cover pins 1 and 2. Pin 3 (the bottom pin) should be left uncovered.

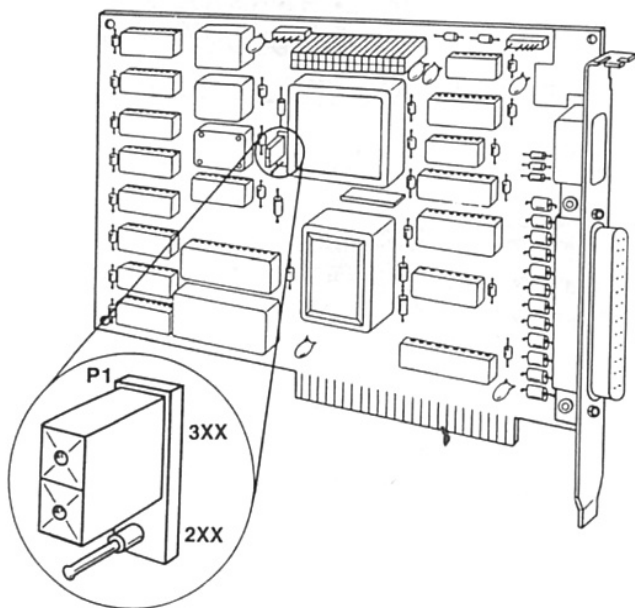


Figure 2-2. 2XX/3XX Jumper

Mounting the VDC 750 in an AT&T Computer

Follow these steps to install the video display controller into your AT&T 6386 WGS.

If you are installing the VDC 750 in an AT&T PC 6300 PLUS, refer to **Appendix F**. If you are installing the VDC 750 in an AT&T PC 6310, refer to the installation instructions in **Appendix G**.

Removing the Cover of Your Computer

1. Turn off your computer, printer, and all other attachments.
2. Unplug the computer's power cord from the electrical outlet. If you have an expansion unit, unplug that power cord as well.

Caution

Failure to disconnect the power may damage your computer or cause personal injury.

3. Turn the computer so that the rear of the unit is facing you.
4. Disconnect all the cables attached to the rear of your computer.
 - If necessary, first loosen the screws holding the cables in place.
5. Move your monitor, keyboard, and any other attachments away from your work area.
6. Find the screws on the back of your unit and unscrew them about 1/4 of an inch.

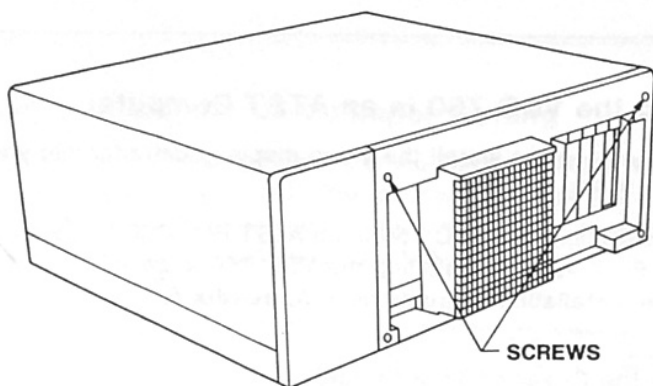


Figure 2-3. AT&T 6386 WGS Unit

7. Now turn the unit so that the front is facing you, and place your hands on the sides of the cover.
8. Firmly slide the cover forward while keeping the base stationary. The cover fits snugly and it will only move about 1/8". If it does not move, you may have to loosen the screws a bit more.

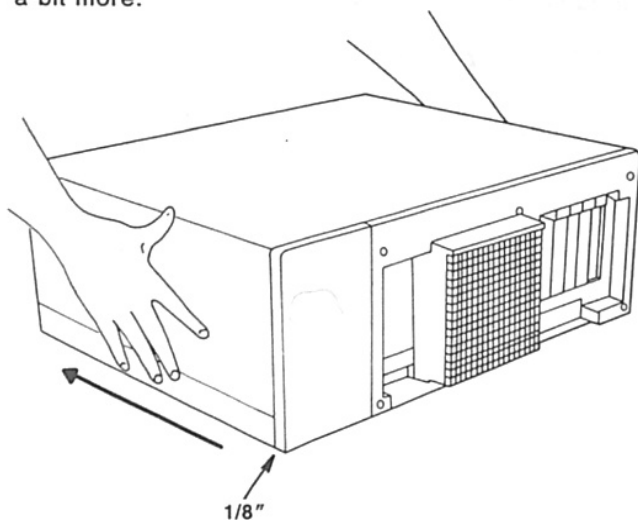


Figure 2-4. Removing the Cover

9. Place your hands on the sides of the cover toward the rear and tilt the cover so that the rear section is higher than the front.
10. Lift the cover from the base unit and set it aside.

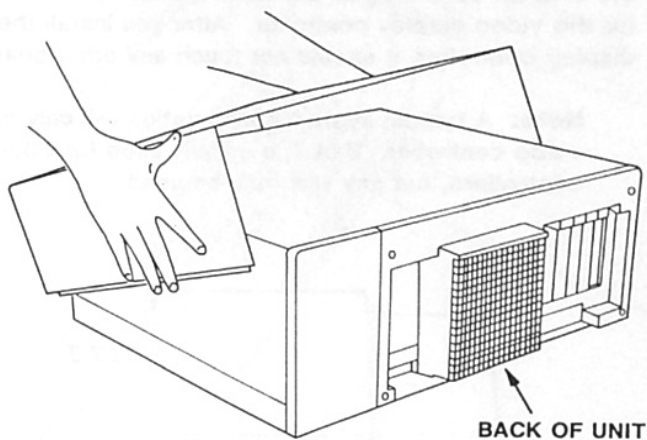


Figure 2-5. Removing the Cover (continued)

Installing the Video Display Controller

Follow these steps to install the video display controller.

1. Choose an expansion slot. If there are other boards inside the unit, be sure they do not interfere with the space you need for the video display controller. After you install the video display controller, it should not touch any other boards.

Note: A typical system configuration will only contain one video controller. Slot 1 is usually used for video display controllers, but any slot may be used.

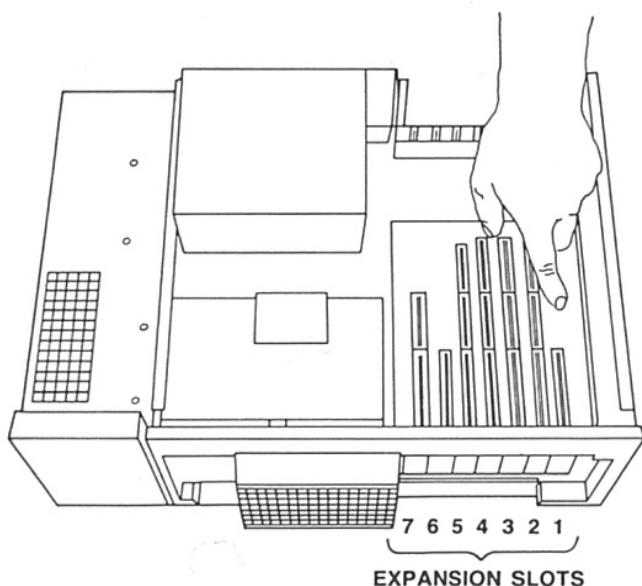


Figure 2-6. Choosing an Expansion Slot

2. Remove the screw from the metal cover of the expansion slot you have chosen. Set the screw aside to use later.

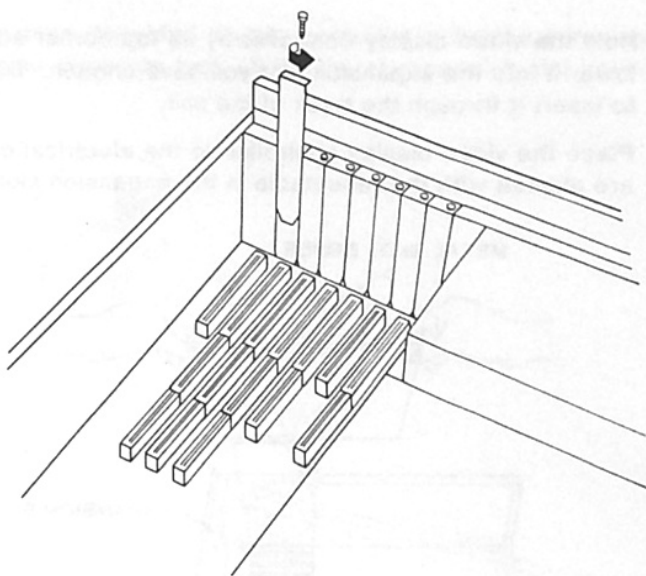


Figure 2-7. Removing the Expansion Slot Cover

3. Remove the expansion slot cover by sliding it up.
4. Break out and discard the plastic cover protecting the slot (if your computer is so equipped) if it has not already been removed.

5. Hold the video display controller by its top corner edges and lower it into the expansion slot you have chosen. Do not try to insert it through the back of the unit.
6. Place the video display controller so the electrical contacts are aligned with the receptacle in the expansion slot.

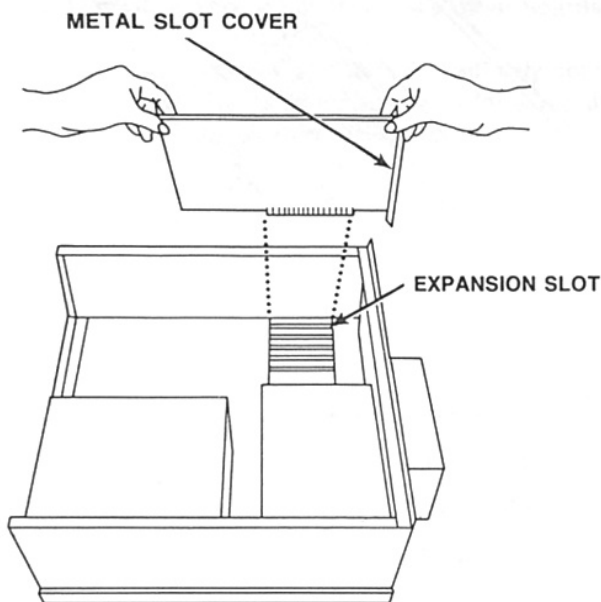


Figure 2-8. Installing the Video Display Controller

7. Press down on the top edge of the video display controller until you feel and hear it "snap" into place. The video display controller is "locked" when the metal faceplate on the end of the board is flush with the frame of the CPU.
 - Make sure that the video display controller is not touching any other board. If it is, move the board to another slot.

8. Screw down the video display controller using the screw you set aside when you took off the metal expansion slot cover.

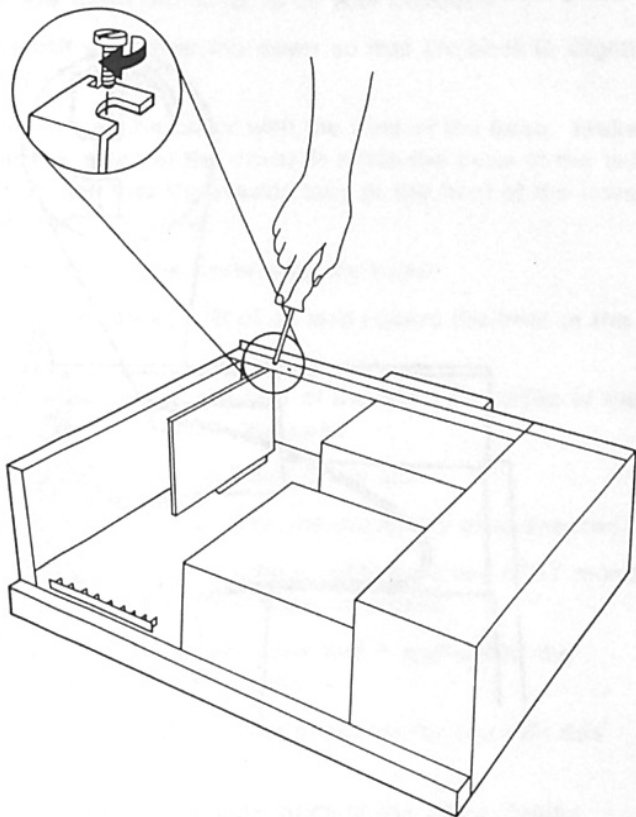


Figure 2-9. Installing the Video Display Controller (continued)

9. Connect the 2-wire cable labeled "CRT" coming from the power supply to the 2-pin connector on the corner of the video card if present in your computer. (Required only if you are using Model 313 display.)

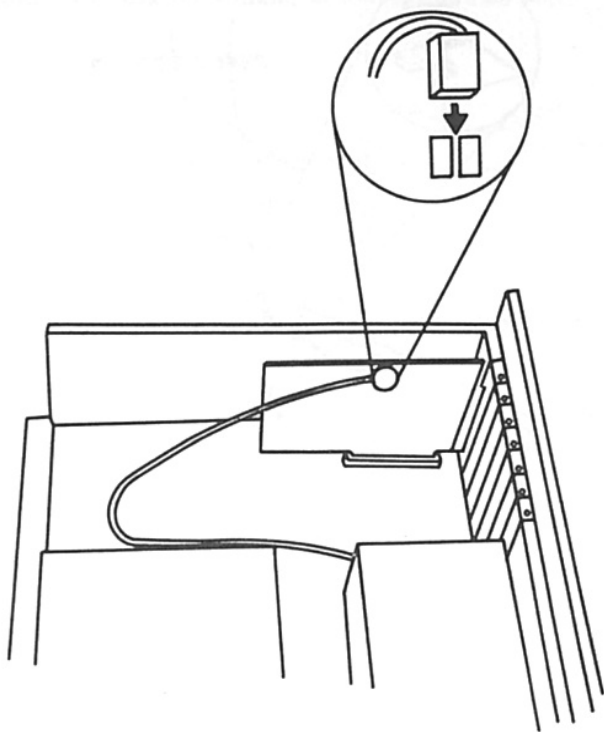


Figure 2-10. Installing the Video Display Controller (continued)

Finishing Up

If you have purchased any other expansion boards, or if you removed any boards to install the video display controller, install or replace them now while the cover is off your computer.

1. Face the unit and lower the cover so that the back is slightly higher than the front.
2. Align the front of the cover with the front of the base. Make sure that the sides of the cover fit within the base of the unit at the front and that the plastic tabs at the front of the cover are under the disk drive.
3. Lower the back of the cover onto the base.
4. Slide the cover about 1/8 of an inch toward the front of the unit.
5. Slide the cover toward the rear of the unit. The sides of the cover should now fit within the base.
6. Tighten the screws at the back of the unit.
7. Connect all of the cables that you previously disconnected.
8. Connect and screw the interface cable from any AT&T monitor into the back of the video display controller.
9. Plug in the computer power cord, and if applicable, the monitor and any expansion units.

Now proceed to configure your computer for use with this video card.

You have now completed the installation of the video display controller and should verify that the monitor displays correct information.

Configuring the AT&T Computer

All of the new AT&T Computers, including the PC 6310 and the 6386 WGS, have configuration utilities built into the Customer Diagnostics Diskette provided with the system.

Your computer may need to be configured for the VDC 750. Use the Customer Diagnostics Diskette that came with your AT&T computer to check the NV RAM (Non-Volatile Random Access Memory) settings. If there are any errors reported in the settings, consult your User's Guide for the proper use of the SETUP Utility on your Customer Diagnostics Diskette.

Installing the Software

The VDC 750 will operate properly without additional software installation. If you do not want to install the software that comes with the video display controller, you may omit this section. You should, however, refer to the file README.TXT on the Utility Software Diskette for additional information and/or corrections to this manual.

Included with the Video Display Controller VDC 750 are 5.25" and 3.5" Utility Software Diskettes. These diskettes have software to enable you to use the VDC 750 with your computer to run certain software programs in high-resolution color and monochrome modes. The diskettes also contain software to enable you to switch the operating modes of the VDC 750. Both diskettes contain the same software. Use the diskette which is compatible with your computer.

The files on the diskette that enable popular programs to run are called "drivers". Drivers are loaded into the computer using DOS commands and, once installed, allow certain large software programs (e.g., Microsoft Windows) to run in high-resolution color or monochrome modes. The drivers need only to be installed once. They are used as needed by their associated programs.

The diskette also contains a program that allows the user to change the resolution of the display during computer operation. This program is named VDCMODE.EXE and can be called many different times during a user session. It is a general utility that may be used by many different software packages.

Operating the VDC 750 Mode Switching Program, VDCMODE.EXE

The VDCMODE.EXE program allows users to manually select the operational mode of the VDC 750 either from a menu or directly from the DOS prompt line. VDCMODE.EXE overrides the configuration DIP switch.

VDCMODE.EXE also lets you start a game disk that otherwise might not run on the VDC 750 because of exotic copy protection schemes.

To invoke this program, simply start your computer system. At the DOS prompt, insert the diskette in drive A and type:

VDCMODE [ENTER]

A menu will appear listing several options. Those available will be highlighted (inverse text). Menu options not appropriate for the monitor or configuration of the system will be in normal text. Use the up and down arrows to select a highlighted feature. When the desired feature is selected (blinking), press the [ENTER] key.

You can also run VDCMODE.EXE from the DOS prompt line, bypassing the menu. This is useful for incorporating VDCMODE.EXE commands into a batch file. Below is a listing and explanation of the various VDCMODE.EXE parameters which can be typed from the DOS prompt:

VDCMODE [ENTER]	EGA menu appears
VDCMODE EGA [ENTER]	Restricts card to EGA operation.
VDCMODE CGA [ENTER]	(For use with color displays.) Switches to AT&T/CGA mode. If you are using an enhanced color display in the 350-line mode, the Card will switch to the 200/400-line mode. A warm boot (Control-Alt-Del Key sequence) will bring you back to the default configuration mode specified by the DIP switch.
VDCMODE BOOT [ENTER]	Prompts the user to insert a disk in drive A and press a key to boot a disk. Used in conjunction with specific video-mode parameters and/or LOCK parameter to run protected game program.

If the current mode is locked, any command specifying a video mode, such as VDCMODE CGA, will unlock the card (unless used with the LOCK parameter).

If you make a mistake typing the VDCMODE command, the program gives you the option of using the VDCMODE menu or returning to DOS.

More than one VDCMODE command line can be used. The example below sets the VDC 750 to start a protected CGA game disk.

VDCMODE CGA BOOT [ENTER]

Note: MDA modes are not supported.

Copy protection: The diskette supplied with the VDC 750 is not copy protected. Use the DOS COPY command to make a backup copy of this diskette, and store the original. We recommend that you backup the VDC 750 disk before using any of the programs.

Installing Drivers

Please refer to **Appendix E** for instructions on how to install drivers with individual software packages.

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APPENDIX A

CONFIGURATION DIP SWITCH SETTINGS

The Configuration DIP Switches can be set to change the operating characteristics of the video board. These can be changed in order to utilize hardware or software that operate in modes or use features that are different from AT&T's. For optimum performance when using AT&T computers and monitors, configure the VDC 750 in accordance with the installation instructions provided in the primary portion of this manual.

The following tables list valid switch settings and corresponding operating modes for the VDC 750.

Lever 1	Lever 2	Lever 3	Lever 4	Monitor/Default Mode
on	off	off	on	Standard/40 column
off	off	off	on	Standard/80 column
on	on	on	off	Enhanced/"200" line
off	on	on	off	Enhanced/350 line (default)

Standard = 16 colors/shades

Enhanced = 64 colors

Lever 5 = AT&T/IBM video timing select. This switch selects between AT&T video timing and IBM video timing.
ON = IBM timing. OFF = AT&T timing.

Note: This switch should always be OFF when using AT&T monitors.

Lever 6 = Default Video Mode. This switch selects whether the board should start up in AT&T/CGA emulation mode or in EGA emulation modes.

ON = AT&T/CGA. OFF = EGA.

APPENDIX B

VIDEO CONNECTOR

The Video Connector is a 25-pin, D-shell female connector that is attached to the monitor. This connector outputs all of the digital signals needed to drive the monitor display.

All of the signal definitions on the Video Connector are given in the following table.

Pin Number	Signal
1	Horizontal Synch
2	Monitor ID 0
3	Vertical Synch
4	D1/Red
5	D2/Green
6	D0/Blue
7	Highlight/Green'
8	Red'
9	Blue'
10	Monitor ID 1
11	Mode 0
12	Mode 1
13	Degauss (Optional)
14	Ground (Horizontal Synch)*
15	Ground (Vertical Synch)*
16	Ground (D1, Red)*
17	Ground (D2, Green)*
18	Ground (D0, Blue)*
19	Ground (Highlight)*
20	Ground (+15V mono; Red' color)*
21	Ground (+15V mono; Blue' color)*
22	No Connect
23	No Connect
24	+15V Pass-through
25	+15V Pass-through

* indicates all grounds that are tied together

VIDEO CONNECTOR

The Video Connector is a 25-pin D-subminiature connector that is attached to the monitor. The connector only a set of the signal signals needed to drive the monitor display.

All of the signal definitions on the Video Connector are given in the following table:

Signal	Pin
Horizontal Sync	1
Vertical Sync	2
Vertical Sync	3
Vertical Sync	4
Vertical Sync	5
Vertical Sync	6
Vertical Sync	7
Vertical Sync	8
Vertical Sync	9
Vertical Sync	10
Vertical Sync	11
Vertical Sync	12
Vertical Sync	13
Vertical Sync	14
Vertical Sync	15
Vertical Sync	16
Vertical Sync	17
Vertical Sync	18
Vertical Sync	19
Vertical Sync	20
Vertical Sync	21
Vertical Sync	22
Vertical Sync	23
Vertical Sync	24
Vertical Sync	25

APPENDIX C CONNECTORS

- Feature Connector
- Feature Support Connector

Feature Connector

An IBM compatible Feature Connector is included with the VDC 750. A detail of the Feature Connector and a description of each pin is given in Figure C-1.

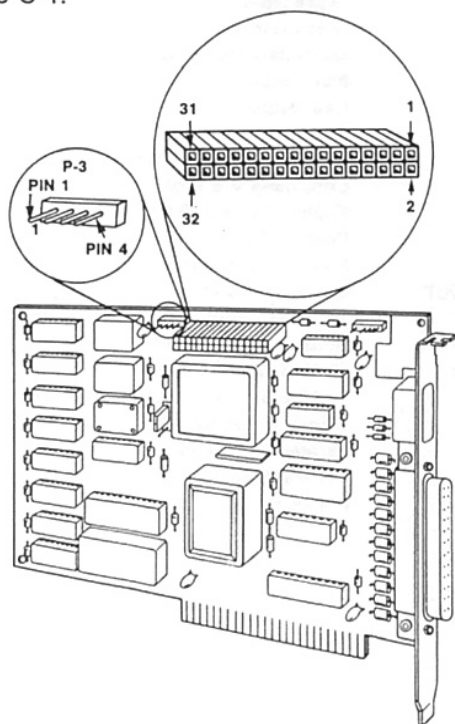


Figure C-1. Feature Connector

Note that signals generated by the VDC 750 and leaving through the Feature Connector are labeled OUT. Signals coming into the Feature Connector from outside sources are labeled IN.

Pin	Signal Name	Description
1	GND	
2	-12 V OUT	
3	+12 V OUT	
4	J1	Auxillary Jack 1 (Supp. Conn. Pin 1)
5	J2	Auxillary Jack 2 (Supp. Conn. Pin 3)
6	Green' IN	Secondary Green Input
7	Red' IN	Secondary Red Input
8	Blue' IN	Secondary Blue Input
9	ATRS/L OUT	Attribute Shift Load
10	Blue IN	Blue Input
11	Green IN	Green Input
12	Green OUT	Green Output
13	Red' OUT	Secondary Red Output
14	Blue OUT	Blue Output
15	Red OUT	Red Output
16	Red IN	Red Input
17	FEAT 1 IN	Feature Code 1, Bit 6-In Stat Reg 0
18	BLANK OUT	Composite V & H blanking
19	FEAT 0 IN	Feature Code 0, Bit 1-In Stat Reg 0
20	FC1 OUT	Feature Control Bit 1, Output
21	FC0 OUT	Feature Control Bit 0, Output
22	Green'/Int. OUT	Secondary Green/Intensity Output
23	Blue'/V OUT	Secondary Blue/Mono Video Output
24	H Synch OUT	Horizontal Synch Output
25	V Synch OUT	Vertical Synch Output
26	14 MHz OUT	14 MHz Signal from System Board
27	Internal OUT	Signal Output from Bit 4-Misc Out Reg
28	EXT OSC IN	External Dot Clock Input
29	V IN	Vertical Synch Input
30	H IN	Horizontal Synch Input
31	GND	
32	+5V OUT	

Feature Support Connector

The Support Connector is identified as P3 on the VDC 750 and located to the left of the Feature Connector. This connector is a substitute for the standard RCA connectors present on the IBM EGA board.

Pin	Attachment
Pin 1	Jack 2 (Same as Pin 4 of the Feature Connector)
Pin 2	Ground
Pin 3	Jack 1 (Same as Pin 5 of the Feature Connector)
Pin 4	Ground

APPENDIX D

LIGHT PEN INTERFACE

The Light Pen Interface is an IBM compatible 6-pin field used to provide light pen support on the VDC 750. The Light Pen Interface is located at point P2 on the VDC 750 in the upper right hand corner of the board. AT&T does not supply a light pen assembly.

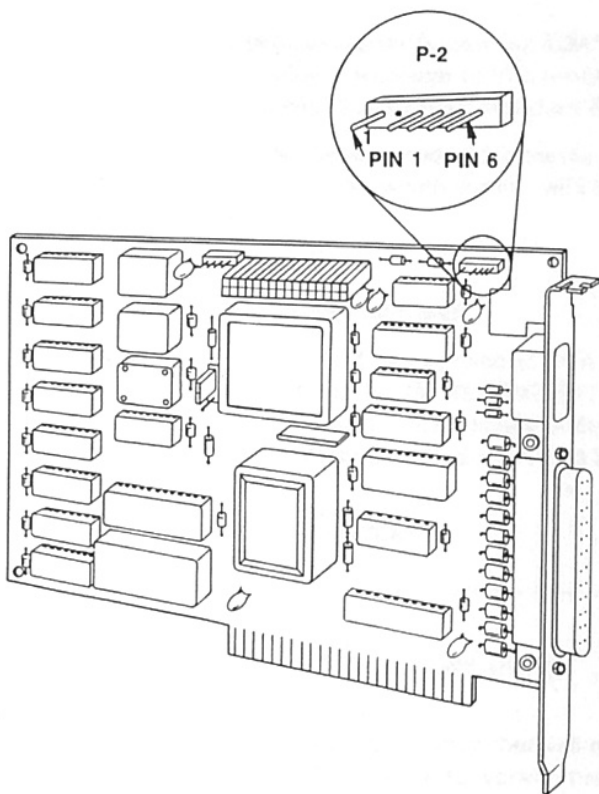


Figure D-1. P-2 Connector

Pin	Attachment
1	+ Light Pen Input
2	Not Used
3	+ Light Pen Switch
4	Ground
5	+5 Volts
6	12 Volts

APPENDIX E

DRIVER SOFTWARE

- Installing the Microsoft/AT&T Windows Setup Disks
 - Installing the AutoCAD Driver
 - Running AutoCAD in 640 x 400 Extended EGA Graphics Mode
-

The VDC 750 card offers 400 line resolution "extended EGA" graphics mode. Software that takes advantage of this mode can display 14% more information on the display than standard EGA.

Software to support this mode has been provided for certain programs and is included on the diskette which comes with the VDC 750. This includes drivers for:

Microsoft Windows

AT&T Windows

AutoCAD (version 2.18 or later) by AutoDesk

Additional software support for standard and enhanced EGA modes may be found by listing the contents of the file README.TXT on the VDC 750 diskette. This file can be listed automatically under your operating system by inserting the Utility Disk in drive A and by typing:

A:README [ENTER]

Installing the Microsoft/AT&T Windows Driver

1. Modifying Your Windows Setup Disks

The VDC 750 Utilities diskette contains a program that will modify your Microsoft Windows Setup and Build disks to work in the extended 400 line resolution mode.

Important: Before you modify your Windows Setup disks make sure to make BACKUP copies of your original disks. The installation program will MODIFY the Windows Setup disk and will ERASE some files that are not needed. Use the DOS DISKCOPY command to make a working copy of each disk before you proceed any further. Store the original set of Windows disks in a safe place.

After making duplicates of the original Windows disks, you are ready to continue. Place the VDC 750 utilities disk in the A: drive and type:

WIN400 [return]

The program will then print a question asking if you wish to continue. If you type YES in response, you will be prompted by the program to insert the Windows Setup disk (disk 1) followed by the Windows Build disk (disk 2). After following the program's instructions, the disks will be modified to support the extended 400 line EGA graphics mode. You must now install Windows with the modified disks in order to complete the process.


2. Installing Windows with Extended 400 Line EGA Graphics

You should now run the Setup program on the modified Windows Setup disk to install or reinstall Windows on your computer system. Insert the Windows Setup Disk (disk 1) in drive A: and type:

SETUP [return]

The Windows Setup program will now ask a series of questions about your computer system. Respond to these questions as directed by the Windows documentation.


When the Setup program inquires about the Graphics Adapter type you are using, you will be presented with a list of possible choices. Choose the option for "EGA 400 Color Display". Type the number for this option and press return. The Windows Setup program will then proceed to copy files and prompt for other disks. Make sure that you use the set of modified disks for these requests.



When the Setup program completes, Windows will be installed for use with the VDC 750 in the extended 640 by the 400 EGA graphics mode.

Installing the AutoCAD Driver

1. Copy the file ACAD400.EXE from the VDC 750 Utilities diskette to your AutoCAD diskette or subdirectory. This file is a program that loads an ADI driver which allows AutoCAD to work in the extended 640 by the 400 EGA mode of the VDC 750.
2. Run ACAD400.EXE from the AutoCAD diskette. You will get a message that reads:




**--AutoCAD ADI Driver--
EGA 400 !!! 640 x 400**

This indicates that the AutoCAD driver for the extended 640 by 400 mode of the VDC 750 has been loaded into memory.

3. If you are using a mouse or graphics tablet that requires a separate driver, make sure that its driver is loaded before the next step.
4. Start the AutoCAD program by typing:

ACAD [return]

5. Select option 5 from the main menu to configure AutoCAD.
 6. Choose option 3, Configure Video Display, from the configuration menu.
 7. Choose the option for "ADI Display" driver from the list of available video drivers. When asked for the hexadecimal interrupt code, choose the default "7A."
 8. Make sure all other configuration options are set appropriately for your system.
- 

9. Exit to the main menu and save your configuration changes.
10. AutoCAD is now ready to run in the extended 640 by the 400 EGA graphics mode.

Running AutoCAD in 640 x 400 Extended EGA Graphics Mode

Once you have configured AutoCAD as described above, you can start AutoCAD by performing the following steps:

1. Load the 400 line ADI driver by typing:

ACAD400 [return]

2. Load the mouse driver by typing:

MOUSE [return]

Note: The actual command is dependent on the type of mouse or tablet you are using. Refer to their documentation for the specific command.)

3. Start the AutoCAD program by typing:

ACAD [return]

This process can be simplified by creating a DOS BATCH file which incorporates these commands. Refer to your DOS user's guide for information on creating BATCH files.

APPENDIX F

INSTALLING THE VDC 750 IN THE AT&T PC 6300 PLUS

The VDC 750 can be installed in the AT&T PC 6300 PLUS, but the indigenous video controller board has to be disabled before the VDC 750 can operate correctly.

Refer to the following steps or the *Hardware Reference Manual for the AT&T PC 6300 PLUS* (on page 4-75) to disable the indigenous video controller.

These instructions are valid only for the P-4 Display Controller Board and the PC 6300 PLUS with a version of ROM BIOS of 2.05 or higher. The version of BIOS present in your PC 6300 PLUS is displayed during the power-on Resident Diagnostics.

If the version of ROM BIOS is less than 2.05, contact the AT&T Computer Hotline at 1-800-922-0354 for a replacement kit. The replacement kit will come with ROM BIOS and PAL chips, which are installed on the computer motherboard.

1. Open the PC 6300 PLUS according to the directions in the *User's Guide*, taking care to disconnect all power cords from the computer and expansion devices.
2. Disconnect the monitor cable from the PC 6300 PLUS Display Controller Board.
3. Find the 74LS00 chip on the Display Controller Board, located in position 6H. Refer to Figure F-1 for the placement of this chip.

This chip should be socketed. If it is not, call the AT&T Computer Hotline and obtain a later version of P-4 Display Controller Board.

4. Remove the 74LS00 chip from the socket with a small, flat-bladed screwdriver or a chip puller.

5. Replace the chip with an AT&T PC 6300 PLUS Reconfiguration Chip, taking care to place the chip in the proper pin orientation in the socket.

A disabler (Reconfiguration Chip) can be made using a standard 14-pin Augat header and 20-gauge wire. The header must be wired with pins 3, 8, 11, and 14 connected together and pins 6 and 7 connected to each other. No other pins are connected. Refer to Figure F-1 for a detailed view of the disabler chip.

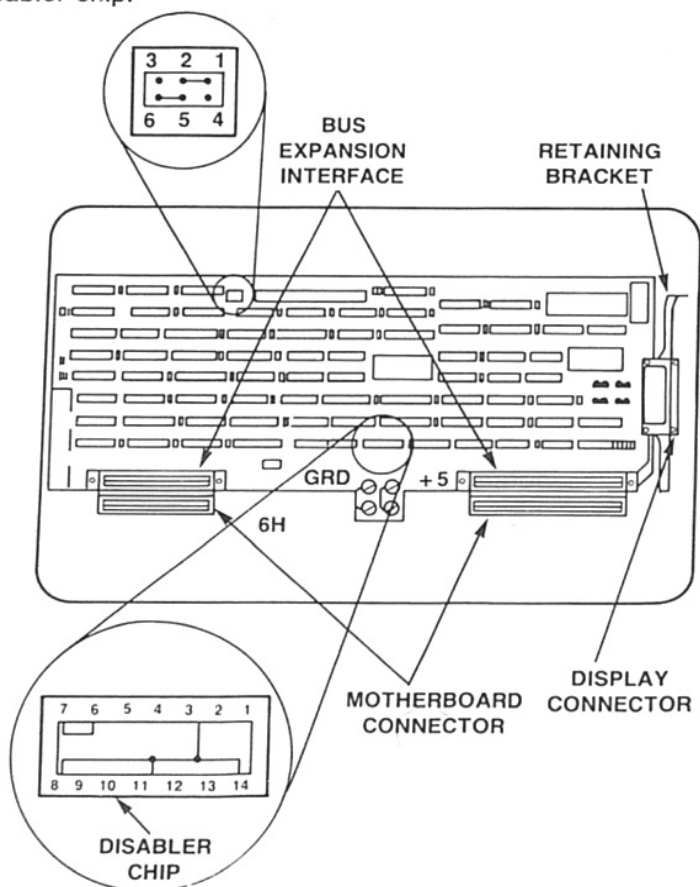


Figure F-1. Jumper Block Location

6. Locate the 6-pin jumper located on the upper-left corner of the Display Controller Board. Refer to Figure F-1 to locate this jumper.

Make sure that the 2-pin plastic jumpers are covering pins 2 and 1 and pins 6 and 5 as shown in the figure.

7. Remove the bottom cover of the computer and locate the DIP switch DSW 1 on the motherboard. See Figure F-2 for the location.

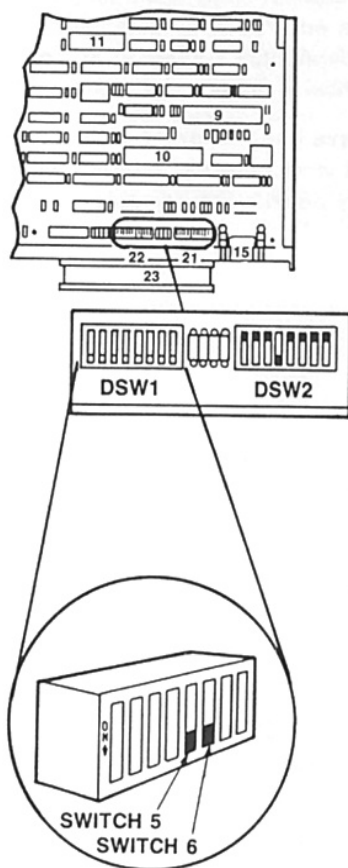


Figure F-2. Motherboard DIP Switches

8. Change switch settings of SW 5 and SW 6 to ON.
9. Replace the bottom cover of the computer.
10. Remove the 2-wire cable labeled "CRT" from the Display Controller Board.
11. Install the VDC 750 in the computer following the instructions on Card Installation in the PC 6300 PLUS User's Guide.
12. Install the cover on the computer and attach power and peripheral cables. Attach the monitor to the VDC 750. Your computer is now ready to install software. Refer to the Software Installation section of this manual for instructions on loading software drivers and utilities.

If these steps have been followed in the proper sequence and the display does not work properly, contact the AT&T Computer Hotline. The problem may be with the computer or the monitor rather than the VDC 750.

APPENDIX G

INSTALLING THE VDC 750 IN THE AT&T PC 6310

Before installing the VDC 750 in the AT&T PC 6310, the Video Display Controller present in the PC 6310 must be disabled.

Follow these directions to disable the indigenous Video Display Controller and install the VDC 750 in the PC 6310.

1. Remove all power and accessory cables attached to your PC 6310 and attached peripherals. Remove the top cover according to directions in the User's Guide for the AT&T PC 6310.
2. Locate the indigenous Video Display Controller and move the 2-pin plastic jumper at W1 from position 3-2 to 2-1 as shown in Figure G-1.

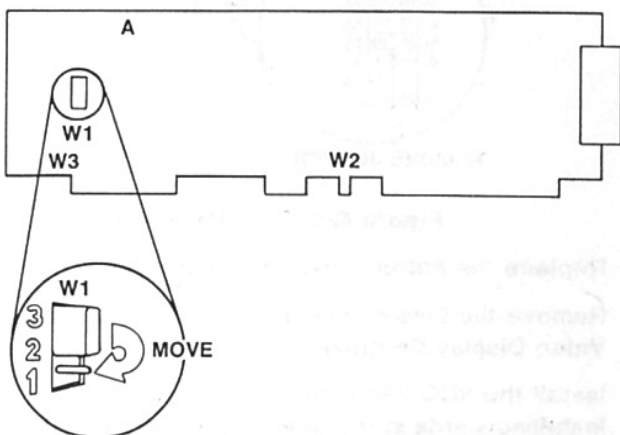


Figure G-1. Two-Pin Plastic Jumper

3. The computer motherboard must now be configured; remove the bottom cover of the computer.
4. Remove the 2-pin motherboard jumper at location JU2 pins 5-12 and save. This jumper can be used in the future if the indigenous Video Display Controller is to be reconfigured. A detailed view of the jumper and the pins is shown in Figure G-2.

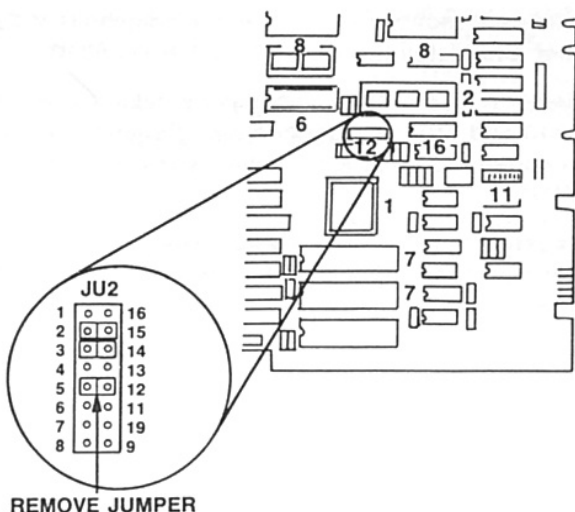


Figure G-2. Two-Pin Motherboard Jumper

5. Replace the bottom cover on the computer.
6. Remove the 2-wire cable marked "CRT" from the indigenous Video Display Controller.
7. Install the VDC 750 in the computer using the section on Installing Cards in the User's Guide to the PC 6310 as a guideline.

8. Replace the top cover of the machine and attach all power, accessory, and monitor cables.
9. To use the EGA features on the VDC 750, insert the PC 6310 Customer Test diskette into the floppy drive. Run the SETUP utility to change the controller setting in the NV RAM (Non-Volatile Random Access Memory).
10. The software drivers and utilities can now be installed by following the directions in the Installation of Software section of this manual.

1. The first part of the paper is devoted to a general discussion of the problem of the existence of a solution of the system of equations (1) and (2) under the assumption that the functions $f_i(x)$ and $g_j(x)$ are continuous and satisfy certain conditions.

2. In the second part of the paper we shall consider the case when the functions $f_i(x)$ and $g_j(x)$ are piecewise continuous and satisfy certain conditions.

3. The third part of the paper is devoted to a study of the properties of the solutions of the system of equations (1) and (2) under the assumption that the functions $f_i(x)$ and $g_j(x)$ are continuous and satisfy certain conditions.

4. The fourth part of the paper is devoted to a study of the properties of the solutions of the system of equations (1) and (2) under the assumption that the functions $f_i(x)$ and $g_j(x)$ are piecewise continuous and satisfy certain conditions.



APPENDIX H

INSTALLING THE VDC 750 WITH STARLAN

- Changing the RAM Memory Option Jumper
 - Changing the Batch Files
-

When installing the VDC 750 in a system in which an AT&T STARLAN NAU card is also installed, the RAM MEMORY address setting of the STARLAN card must be changed. Otherwise, neither the VDC 750 nor STARLAN will function correctly. This consists of two steps: changing the RAM MEMORY OPTION jumper on the NAU and changing the STARLAN batch files.

Changing the RAM Memory Option Jumper

Located on the NAU is a set of 16 pins referred to as the RAM MEMORY OPTION header. See Figure H-1 below. STARLAN NAU cards are normally shipped with the plastic jumper block set on the two pins at position C. Carefully remove the block from position C and place it over the pins at position D.

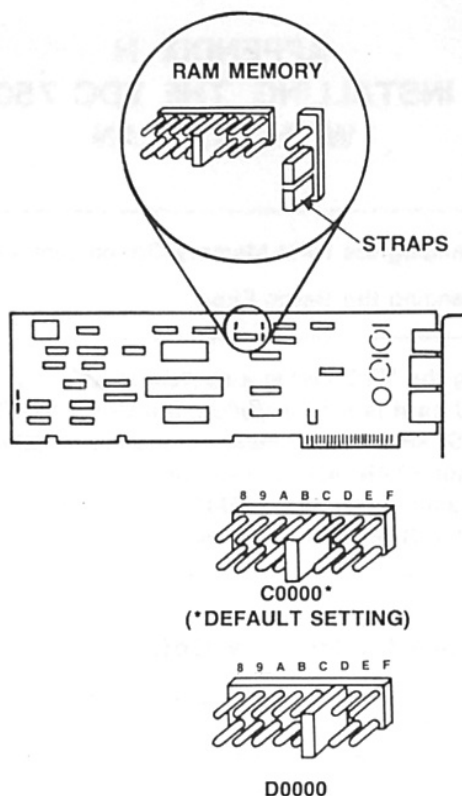



Figure H-1. RAM MEMORY OPTION Header

Changing the Batch Files

Locate the file(s) CLIENT.BAT and/or SERVER.BAT on your system disks. Make sure you have a backup copy of these files before proceeding. Using the MS-DOS editor program EDLIN (refer to the



MS-DOS user's manual for instructions) or a similar editor program, locate the following line in the CLIENT.BAT and/or SERVER.BAT files:

session <parameters>

Where <parameters> indicates other text on the line.
Using the editor, change this line to read:

session/ daram=D000 <parameters>

Save the modified files. STARLAN and the VDC 750 should now work together. Refer to your STARLAN Network Access Unit Installation Guide for further information.

MS-DOS user's manual for installation of a hard disk program.
to save the following and the USER.DAT and the SYSTEM.DAT
files.

Warning: Do not delete

When you delete a file, the file is not deleted from the disk
until the editor changes the file to zero.

Warning: Do not delete

Save the installation file. If you do not save the file, you
will lose the file. Save the file in a safe place. Do not
delete the file for the installation.

Warning: Do not delete

Warning: Do not delete

Warning: Do not delete

APPENDIX I

VIDEO MODE REFERENCE

- AT&T Mode Operation
 - EGA Mode Operation
-

The following are lists of the video modes supported by the VDC 750. The hexadecimal values listed for each mode may be used as the mode parameter for the SET VIDEO MODE call in the BIOS.

AT&T Mode Operation

The VDC 750 can be placed into AT&T/CGA mode either by using the VDCMODE.EXE program with the CGA parameter, or by executing a BIOS Set Video Mode call to the 40h. Calling for a mode change to EGA modes 0Dh, 0Eh, 10h, or 42h will cause a switch into EGA mode. Once in AT&T/CGA mode, use the following table for display format and resolution.

Mode (hex)	Type	Alpha Fmt	Colors	Resolution	Vert Lines	Char BOX	Notes
0#	A/N	40x25	16	320x200	400	8x16	Modes 0
1	A/N	40x25	16	320x200	400	8x16	through 6
2#	A/N	80x25	16	640x200	400	8x16	emulate the
3	A/N	80x25	16	640x200	400	8x16	video modes
4	APA	40x25	4	320x200	400	8x16	of the
5	APA	40x25	4	320x200	400	8x16	IBM Color
6	APA	80x25	2	640x200	400	8x16	Graphics
40*	APA	80x25	2	640x400	400	8x16	Adapter (CGA)
							AT&T
							640x400
							monochrome
							graphics
48*	A/N	80x50	16	640x400	400	8x8	AT&T
							80x50
							'tiny text'
							alphanumeric
							mode

A/N = alphanumeric

APA = all points addressable

= Underline bit enabled for these CGA monochrome modes produces a white character with a white underline whenever the BLUE character attribute is set. Other bits function as in CGA.

* = AT&T specific (non-CGA) modes

EGA Mode Operation

The VDC 750 can be placed into EGA mode either by using the VDCMODE.EXE program with the EGA parameter, or by executing a BIOS Set Video Mode call to mode 0Dh, 0Eh, 10h, or 42h. Calling for a mode change to AT&T mode 40h will cause a switch into AT&T mode. Once in EGA mode, use the following table for display format resolution.

Mode (hex)	Type	Alpha Fmt	Colors	Resolution	Vert Lines	Char BOX	Notes
0*	A/N	40x25	16	320x350	350	8x14	
1*	A/N	40x25	16	320x350	350	8x14	
2*	A/N	80x25	16	640x350	350	8x14	
3*	A/N	80x25	16	640x350	350	8x14	
4	APA	40x25	4	320x200	400	8x8D	
5	APA	40x25	4	320x200	400	8x8D	
6	APA	80x25	2	640x200	400	8x8D	
7#	A/N	80x25	4	720x350	350	9x14	
D	APA	40x25	16	320x200	400	8x8D	
E	APA	80x25	16	640x200	400	8x8D	
F#	APA	80x25	4	640x350	350	8x14	
10	APA	80x25	16	640x350	350	8x14	
42*	APA	80x25	16	640x400	400	8x16	640x400 Extended graphics mode

A/N = alphanumeric

APA = all points addressable

* = EGA high res. emulations of CGA modes.

= mode 7 and F are monochrome display modes not supported on the VDC 750.1

8x8D = 8 x 8, double scanner.

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